



## Climate Change, Adaptation and Security in Central America and the Caribbean

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Secretary of State Clinton began her term as the United States Secretary of State by calling for a U.S. foreign policy led by Diplomacy, Development and Defense. Success in applying this concept has been quickly realized at the regional level where cooperation between the Department of State (DOS), the U.S. Agency for International Development (USAID), and the Combatant Commands has been ongoing, particularly in the area of environmental security. United Nations data showing the link between resources and environmental issues and conflict are well known to regional economic and security organizations; but so too, is the potential for resource scarcity and environmental change to create opportunities for confidence building measures and multilateral cooperation that builds host nation capacities. Today, with its impact on water and food security and governmental legitimacy, climate change adaptation has emerged as a leading regional security issue and major concern to regional governments and their populations. The DOS Regional Environmental Office (Hub) and the Command Engineer Office of the U.S. Southern Command (USSOUTHCOM) have a decade-old partnership in promoting regional environmental security cooperation and have been supported closely by the U.S. Army War College's Center for Strategic Leadership (CSL). (The latest CSL publications covering these issues can be accessed at: <http://www.csl.army.mil/IssuePapers.aspx#74>). This team has taken the lead in addressing the security dimensions of climate change adaptation in the Central America and Caribbean Region.

Conservation International classifies Mesoamerica and the Caribbean among the world's top twenty-five "biodiversity hotspots" because climate change will have a major impact on those region's economies and natural resources. Climate-related changes are already being experienced in the region with many Latin American countries being vulnerable due to their extensive coastlines, particularly the small island states in the Caribbean. Hurricanes, floods, landslides and earthquakes in the region are becoming more frequent or severe, thereby affecting stability, contributing to poverty, destroying agricultural land, and contributing to food and clean water scarcity. These changes will shape the region's security environment, and increase the need for military support to civil authorities in order to mitigate and adapt to those effects.

The economies of Central American and Caribbean are primarily based on agriculture, hydropower and fisheries. Climate changes make these areas particularly vulnerable and also affect critical public sectors, such as health services, water utilities, and private sector foreign exchange earners such as tourism trade and development. The low national per-capita GDPs of countries in the region means that most are unable to avoid or absorb the economic consequences of severe climate change impacts. The 2007 Report of the *Intergovernmental Panel on Climate Change (IPCC)* states that the resilience of many regional ecosystems is *likely* to be exceeded in this century by an unprecedented combination of climate change associated disturbances, such as flooding, drought, wildfire, insects, and ocean acidification, and the global change drivers of land use change, pollution, fragmentation of natural systems, and the over-exploitation of resources.<sup>1</sup>

1. Intergovernmental Panel on Climate Change, Fourth Assessment Report (AR4), 2007, presents key findings and uncertainties of the three Working Groups.

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Countries of the region are greatly concerned by climate change and signed the Declaration of Commitment, *Securing Our Citizens' Future by Promoting Human Prosperity, Energy Security and Environmental Sustainability*, at the 2009 Summit of the Americas in Port of Spain. The declaration renews the countries' support for the work of the IPCC and calls upon relevant Ministers and other responsible authorities, to examine potential climate change implications for the respective countries. This will be particularly important to save the weakest and most impoverished sectors, reinforcing national climate adaptation and mitigation actions and plans, and sharing information on sub-regional climate change is essential.

Over the last decade, CSL has worked with the USSOUTHCOM Command Engineers, DoS' Regional Environmental Hub, and other regional partners, in the organization of roundtables, conferences and train-the-trainer workshops in the region to establish environmental security awareness and build multilateral cooperation and capacity in the region. Regional stability depends on the government's ability to meet the basic needs of their populations, and climate change can overwhelm the capacity of fledgling democracies. Because climate change can exacerbate existing tensions and contributes to destabilization, it is a threat to security. The objectives of this collaboration are to encourage a civil military partnership in addressing security threats.

## THE 2010 PANAMA CONFERENCE

USSOUTHCOM Command Engineers, the DoS' Regional Environmental Hub for Central America and the Caribbean, and the Water Center for the Humid Tropics of Latin America and the Caribbean (CATHALAC), sponsored the *2010 Central America and Caribbean Conference entitled "Climate Change, Adaptation, And Security: From Strategy To Action,"* which took place in Panama, September 8-10, 2010. The conference was a follow on to the *Roundtable on Environmental Security and Natural Disasters*, held in San Jose, Costa Rica in July 2009. The 2009 Roundtable identified the most important regional environmental security and natural disaster preparedness issues and their relationship to stability and security in the region, and selected climate change adaptation as the topic for the 2010 conference. A planning committee was formed to coordinate the regional conference that took place a year later in Panama City. CSL was a major contributor and coordinated with USSOUTHCOM and DoS in selecting the topics and methodology to achieve the proposed objectives.

During the conference, the Regional Environmental Hub explored the role of the Energy and Climate Partnership of the Americas (ECPA). The ECPA is a voluntary and flexible framework for advancing energy security and combating climate change, signed by President Obama at the Fifth Summit of the Americas in Trinidad and Tobago in April 2009.

The Panama event brought together representatives from a variety of areas such as government, non-government, academia, regional organizations and military participants from Central America and the Caribbean focused on concerns in the areas of climate change, natural disaster management, civil and military security, and health. Organizers and participants discussed the need to boost the region's capacity to better integrate climate change adaptation and natural disaster preparedness into local and national planning efforts and develop concrete actions toward building resilience to climate change. Participants at the Panama conference worked in break-out sessions developing a Strengths, Opportunities, Weaknesses and Threats (SOWT) analysis, and proposed solutions for each participating country. The DoS Regional Environmental Hub and CSL served as facilitators of a very productive working group that specifically addressed the role of the armed forces in support of civil authorities.

Among the identified challenges and threats in the region is unsustainable land development that contributes to soil erosion, floods, droughts and deforestation. Another regional concern is a lack of natural resource management contributing to food insecurity which will increase local and regional competition contributing to instability. From a political perspective, impacts of climate change will be more acute in countries with weak central governments and among others, leading to an increase in organized crime. Intergovernmental coordination was also identified as an area of concern highlighted by gaps in technological capacity and information, lack of political will, and weak enforcement of laws within nations. As participant nations have extended coastlines, overfishing, water contamination due to pollution and destruction of coral reefs were also identified as concerns. A general attendee perception is that governments in the region assign limited resources to solve these problems.

Recommendations of the group discussion is the need to translate technical information into public policy in all areas of the process from data gathering and monitoring to planning, risk forecasting and quantification of economic costs. Key conference themes focused on the role of information sharing in adaptation. In order to make necessary

adaptations to climate change decision-makers must be well informed.<sup>2</sup> They should incorporate information about climate variability and change into their plans, including data on environment, risk and security. Nations of the region need to use climate change information in a proactive manner and apply more extensive adaptation measures to reduce vulnerability. Examples in the Central American and the Caribbean include:

- Developing heat and drought resistant crop varieties
- Risks and vulnerabilities studies in coastal areas and river banks
- Strengthening public health
- Building new water projects for flood control
- Drought management and desalination
- Natural disaster prevention
- Mitigation and response
- Promoting energy efficiency, conservation
- Increasing in the use of alternative sources of energy<sup>3</sup>



While there were a variety of areas that require improvement, not all of the conference reports were negative. The region has established intergovernmental institutions and regional organizations such as the Water Center for the Humid Tropics of Latin America, the Caribbean (CATHALAC), the Caribbean Community Climate Change Centre (CCCCC), the Central American Disaster Prevention Center (CEPREDENAC), the Central American Regional Integration System (SICA), and the Caribbean Disaster Management Agency (CDEMA) that have improved knowledge on key issues and could be used as vehicles for information sharing. SERVIR, the renowned regional Visualization and Monitoring System, managed by CATHALAC with support of NASA and USAID, integrates earth observations and forecast models with *in situ* data and knowledge for decision-makers. Attendees proposed including a “chapter” in SERVIR on climate change adaptation to be used as a portal for communication among partners and the general population.

The Inter-American Development Bank (IDB), the United Nations Global Environment Facility (GEF) and the World Bank were identified as possible funding streams for regional adaptation plans. While public awareness and attention to climate change is growing, the political will to move forward on climate change adaptation and related security issues is of major concern. The participant’s vision statement for the region is, *“A region with institutions and strong agencies, working together to create a climate change resilient community.”* Achieving this will require an informed leadership, multilateral cooperation, and the creative use of all elements of national power.

### ***The Role of the Armed Forces in Climate Change Adaptation***

One of the most important strengths defined by participants at the Panama conference is the willingness of governments and regional organizations to work with U.S. and regional military and security forces with the goal of mitigating regional climate change effects and building governmental legitimacy. These forces can support civil authorities in the following areas:

- Environmental enforcement
- Transfer of technology and knowledge: assist with data gathering
- Training and education: impart knowledge and expertise
- Protection of coastal areas and waterways
- Identify vulnerable areas and best evacuation methods
- Impart understanding of climate change as a threat multiplier
- Disaster response: safeguard lives, restore infrastructure

2. In that regard, the Deutsche Gesellschaft für Technische Zusammenarbeit considers education as a key pre-condition for adaptation, in the “Climate Change Information for Effective Adaptation: a Practitioner’s Manual,” 2009.

3. Regarding adaptation, we follow Harvard University Professor John Holdren’s definition of “measures to reduce the adverse impacts on human well-being resulting from the changes in climate that do occur.” Regarding vulnerability, the IPCC defines vulnerability to climate change as the degree to which systems are susceptible to, and unable to cope with, adverse impacts. The concept of risk, which combines the magnitude of the impact with the probability of its occurrence, captures uncertainty in the underlying processes of climate change exposure, impacts and adaptation.

- Human Security and assistance

It is important to point out that *security* is perceived in the region as *social + political stability*, not defense per se.

## FOLLOW-UP ACTIONS

The directory of “environmental security contacts” participants received is only a start. The audience agreed on the need to have a follow-on regional conference in the Spring of 2011 based on best practices. Costa Rica was chosen as the next site for several reasons:

1. The “Communities of Practice” a collaborative project between Costa Rica and Spain which includes developing a model under the United Nations Convention of Climate Change (UNFCCC)
2. An Energy Efficiency Center will be built there as part of the Energy and Climate Partnership of the Americas (ECPA)
3. The conference will be held in partnership with DoS’ Regional Environmental Hub for Central America and the Caribbean, which is based at the U.S. Embassy in San Jose.

Successfully adapting to and mitigating the effects of regional climate change demands cooperation between all regional stakeholders. CSL will continue to support the leadership of the DoS’ Regional Environmental Hub, USSOUTHCOM, USAID’s Regional Environmental Advisor for Central America, and SICA’s Democratic Security Unit and other research centers to promote a regional strategy for climate change adaptation. The principal response strategy for climate adaptation is investing in knowledge (e.g., improving predictions and risks assessments) and builds capacity (improving the capability and tools to make good decisions). Combining the diplomatic, development and defense resources of the United States and regional states with non-governmental organizations and donor organizations, offers the best opportunity to implement this “knowledge and capacity” strategy and mitigate the growing threat of climate adaptation.

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## *America and the Caribbean Climate Change, Adaptation and Security in Central*

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